

coupled to the elongate catheter body, and having a first non-penetrating position and a second tissue penetrating position; and

an actuator member disposed proximate the distal portion and operably coupled to the tissue penetrating member, for moving the tissue penetrating member from one of the first or second positions to the other of the first or second positions, the actuator adding energy to the tissue penetrating member as the tissue penetrating member moves from the first position to the second position.

Sub D3 65 67. An intravascular therapeutic catheter as in claim 57 wherein the catheter body has a proximal portion and further comprising:

a fluid delivery lumen located in the catheter body extending from the proximal portion to a position proximate the tissue penetrating member for delivering a fluid to the location of the tissue penetrating member.

Sub D3 68 20. An intravascular therapeutic catheter as in claim 57 wherein:

the tissue penetrating member is adapted for motion about a pivot point between the first non-penetrating position and the second tissue penetrating position; and the second position is defined by maximum storage of energy in the tissue penetrating member thereby defining motion over a limited distance.

Sub D4 72 21. An intravascular therapeutic catheter comprising:

an elongate catheter body having a distal portion; a tissue penetrating member disposed proximate the distal portion, operably coupled to the elongate catheter

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body, and having a first non-penetrating position and a second tissue penetrating position; and
an actuator member disposed proximate the distal portion and operably coupled to the tissue penetrating member, for moving the tissue penetrating member from one of the first or second positions to the other of the first or second positions, the tissue penetrating member releasing stored energy as the penetrating member moves from the first position to the second position.

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75. An intravascular therapeutic catheter as in claim 74, wherein the catheter body includes a constraining lumen and the first position of the penetrating member is a constrained position where the tissue penetrating member is located within the constraining lumen, and wherein the second position is an unconstrained position where the tissue penetrating member is not constrained by the constraining lumen.

Sub 5 76 72
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78. An intravascular therapeutic catheter of claim 74 wherein: the tissue penetrating member is adapted for motion about a pivot point between the first non-penetrating position and the second tissue penetrating position; and the second position is defined by complete release of the stored energy thereby defining motion over a limited distance.

Sub D6 80 82
C6
82. An intravascular therapeutic catheter comprising: an elongate catheter body having distal portion, and having an axis; a tissue penetrating member disposed proximate the distal portion operably coupled to the elongate catheter body and having a first non-penetrating position and a second tissue penetrating position and having a pivot

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point; and
an actuator member disposed proximate the distal portion and
operably coupled to the tissue penetrating member, for
moving the tissue penetrating member from one of the
first or second positions to the other of the first or
second positions about the pivot point.

80
83. An intravascular therapeutic catheter as in claim 82, wherein
the catheter body includes a constraining lumen and the actuator
member moves the tissue penetrating member from the constraining
lumen within the catheter.

Sub 88
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88. An intravascular therapeutic catheter comprising:
an elongate catheter body having a distal portion and an
axis;
a tissue penetrating member having a tissue penetrating tip
disposed at an angle relative to the axis, the angle
opening in a proximal direction and being of no more
than approximately 90 degrees, the tissue penetrating
member being disposed proximate the distal portion and
operably coupled to the elongate catheter body and
having a first non-penetrating position and a second
tissue penetrating position; and
an actuator member disposed proximate the distal portion and
operably coupled to the tissue penetrating member, for
moving the tissue penetrating member from one of the
first or second positions to the other of the first or
second positions in a substantially transverse path
with respect to the axis.

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C8 Sub D8
91. An intravascular therapeutic catheter comprising:
an elongate catheter body having a distal portion and an
axis;

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a tissue penetrating member having a tissue penetrating tip disposed at an angle relative to the axis, the angle opening in a proximal direction and being of no more than approximately 90 degrees, the tissue penetrating member being disposed proximate the distal portion and operably coupled to the elongate catheter body and having a first non-penetrating position and a second tissue penetrating position; and

an actuator member disposed proximate the distal portion and operably coupled to the tissue penetrating member, for moving the tissue penetrating member a limited distance from one of the first or second positions in a direction substantially non-parallel to the catheter body to the other of the first or second positions.

Sub 58
C9 91 93. An intravascular therapeutic catheter as in claim 91,⁸⁹ wherein the actuator member moves the tissue penetrating member along a lateral path with respect to the axis of the catheter body.

Sub 58
C10 94 97. An intravascular therapeutic catheter as in claim 91,⁸⁹ wherein the tissue penetrating member is cooled.

Sub 58
D11 103. A method for treating cardiac tissue comprising the steps of:

C11
providing an intravascular therapeutic catheter having an elongate catheter body, an actuator and a tissue penetrating member having a tissue penetrating tip disposed at an angle relative to the axis, the angle opening in a proximal direction and being of no more than approximately 90 degrees, the tissue penetrating member being operably coupled to the catheter body and disposed proximate a distal portion of the catheter

body, the tissue penetrating member having a first non-penetrating position and a second tissue penetrating position;

navigating the catheter through vasculature to a treatment site proximate the cardiac tissue; and

adding energy to the tissue penetrating member to move the tissue penetrating member from the first position in a direction substantially non-parallel to the catheter body to the second position.

Sub 107
D12
110. A method for treating cardiac tissue comprising the steps of:

providing an intravascular therapeutic catheter having an elongate catheter body, an actuator and a tissue penetrating member operably coupled to the catheter body and disposed proximate a distal portion of the catheter body, the tissue penetrating member having a first non-penetrating position and a second tissue penetrating position;

navigating the catheter through vasculature to a treatment site proximate the cardiac tissue; and

releasing energy from the tissue penetrating member to move the tissue penetrating member from the first position to the second position.

Sub 113
D13
111. A method for treating cardiac tissue comprising the steps of:

providing an intravascular therapeutic catheter having an elongate catheter body, an actuator and a tissue penetrating member operably coupled to the catheter body and disposed proximate a distal portion of the catheter body, the tissue penetrating member having a pivot point, a first non-penetrating position and a

second tissue penetrating position;
navigating the catheter through vasculature to a treatment
site proximate the cardiac tissue; and
moving the tissue penetrating member from one of the first
or second positions to the other of the first or second
positions about the pivot point.

C 13114 117. A method for treating cardiac tissue as in claim 116¹¹³ wherein
the catheter body includes a restraint lumen and the tissue
penetrating member is restrainable in the restraint lumen; and
wherein the step of moving the tissue penetrating member
further comprises moving the tissue penetrating member
from the restraint lumen whereby the tissue penetrating
member moves from one of the first or second positions
to the other of the first or second positions about the
pivot point.

Sub 117 D14 120. A method for treating cardiac tissue comprising the steps
of:
providing an intravascular therapeutic catheter having an
elongate catheter body, an actuator and a tissue
penetrating member having a tissue penetrating tip
disposed at an angle relative to the axis, the angle
opening in a proximal direction and being of no more
than approximately 90 degrees, the tissue penetrating
member being operably coupled to the catheter body and
disposed proximate a distal portion of the catheter
body, the tissue penetrating member having a first non-
penetrating position and a second tissue penetrating
position;
navigating the catheter through vasculature to a treatment
site proximate the cardiac tissue; and
moving the tissue penetrating member from one of the first

C14
or second positions to the other of the first or second positions in a substantially transverse path with respect to a longitudinal axis of the catheter body.

Sub 112
Dis. } 425. A method for treating cardiac tissue comprising the steps of:

C15
providing an intravascular therapeutic catheter having an elongate catheter body, an actuator and a tissue penetrating member with a tissue penetrating tip, disposed at an angle relative to the catheter body, the angle opening in a proximal direction of no more than approximately 90 degrees, the tissue penetrating member being operable coupled to the catheter body and disposed proximate a distal portion of the catheter body, the tissue penetrating member having a first non-penetrating position and a second tissue penetrating position;

navigating the catheter through vasculature to a treatment site proximate the cardiac tissue; and

moving the tissue penetrating member a limited distance from one of the first or second positions in a direction substantially non-parallel to the catheter body to the other of the first or second positions.

Sub 116
Dis. } 132. A method for treating cardiac tissue comprising the steps of:

C16
providing an intravascular catheter of the type having an elongate catheter body and a tissue penetrating member operably coupled to the catheter body and having a tissue penetrating tip disposed at an angle relative to the catheter body, the angle opening in a proximal direction of no more than approximately 90 degrees, the tissue penetrating member being disposed proximate a

C16

distal portion of the catheter body, the penetrating member having a first non-penetrating position and a second tissue penetrating position;
navigating the catheter through vasculature to a treatment site proximate the cardiac tissue to be treated;
moving the tissue penetrating member from one of the first or second positions in a direction substantially non-parallel to the catheter body to the other of the first or second positions; and
delivering a drug comprising a genetic material to the treatment site.

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133. A method for treating cardiac tissue as in claim ¹²⁷~~132~~ wherein the genetic material, when incorporated into the tissue penetrating member, results in the expression of therapeutic materials.

Sub 134

139. A method of treating cardiac tissue as in claim ¹²⁷~~132~~ wherein the cardiac tissue is proximate a coronary vessel having a wall and wherein the drug is delivered outside the wall of the coronary vessel.

Sub D18

142. A method for treating cardiac tissue comprising the steps of:

C18

providing an intravascular catheter of the type having an elongate catheter body and a tissue penetrating member operably coupled to the catheter body and having a tissue penetrating tip disposed at an angle relative to the catheter body, the angle opening in a proximal direction of no more than approximately 90 degrees, the tissue penetrating member being disposed proximate a distal portion of the catheter body, the penetrating member having a first non-penetrating position and a

second tissue penetrating position;
navigating the catheter through vasculature to a treatment
site proximate the cardiac tissue;
moving the tissue penetrating member from one of the first
or second positions in a direction substantially non-
parallel to the catheter body to the other of the first
or second positions; and
delivering a drug comprising glycoprotein or a fragment
thereof to the treatment site.

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143. A method for treating cardiac tissue comprising the steps
of:

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providing an intravascular catheter of the type having an
elongate catheter body, a tissue penetrating member
operably coupled to the catheter body and disposed
proximate a distal portion of the catheter body, the
penetrating member having a first non-penetrating
position and a second tissue penetrating position, and
having a tissue penetrating tip disposed at an angle
relative to the catheter body, the angle opening in a
proximal direction of no more than approximately 90
degrees, and further having an actuator member operably
coupled to the tissue penetrating member and disposed
proximate a distal portion of the catheter body for
moving the tissue penetrating member from one of the
first or second positions to the other of the first or
second positions;
navigating the catheter through vasculature to a treatment
site proximate the cardiac tissue;
actuating the tissue penetrating member whereby the tissue
penetrating member moves from one of the first or
second positions in a direction substantially non-
parallel to the catheter body to the other of the first

C18
or second positions; and
delivering a drug to the treatment site wherein the drug is
selected from the group consisting of: a peptide, a protein and a
fragment thereof.

Sub 142
D19
147. A method for treating cardiac tissue comprising the steps
of:

providing an intravascular catheter of the type having an
elongate catheter body, a tissue penetrating member
operably coupled to the catheter body and disposed
proximate a distal portion of the catheter body, the
penetrating member having a first non-penetrating
position and a second tissue penetrating position, and
further having an actuator member operably coupled to
the penetrating member and disposed proximate a distal
portion of the catheter body for moving the tissue
penetrating member from one of the first or second
positions to the other of the first or second
positions;

C19
navigating the catheter through vasculature to a treatment
site proximate the cardiac tissue;

actuating the tissue penetrating member whereby the tissue
penetrating member moves from one of the first or
second positions in a direction substantially non-
parallel to the catheter body to the other of the first
or second positions; and

x delivering a drug comprising a genetic material to the
treatment site.

Please add new claims 164, 166, 167 and 168 as follows:

Ins > 135
D20 164. The method of claim 132 wherein delivering comprises:
delivering the drug to myocardium.
Ins >
D21